

Social Support and Coping Styles in Predicting Suicide Probability among Turkish Adolescentsⁱ

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Abstract This study aims to investigate whether the perceived social support and coping styles are predictors of suicide probability by gender. The study was conducted with 445 high schools students, 227 girls, and 218 boys. The participants were aged between 14 and 18, and their average age was 15.90. Data were collected through the 'Multidimensional Scale of Perceived Social Support', the 'Ways of Coping Questionnaire', and the 'Suicide Probability Scale'. Data were analyzed using MANOVA, Pearson correlation test and regression analysis. Results showed that suicide probability, perceived support from friends and significant others and helpless approach scores of the girls were significantly higher than the boys. Besides, significant relationships were found between suicide probability and perceived social support and coping styles. Regression analyses were performed for girls and boys separately. Perceived social support from family, helpless and optimistic styles were found to predict female adolescents' suicide probability significantly. As for male adolescents, in addition to perceived social support from family, helpless and optimistic styles, seeking social support was also found to be a significant predictor of suicide probability. Findings were discussed in line with the related literature, and recommendations were made.

Keywords Suicide Probability, Perceived Social Support, Coping Styles, Adolescence

1. Introduction

According to the World Health Organization data, [80] suicide, which is an important public health problem, is one of the primary causes of death among adolescents. Both in the world [20, 61, 80] and in Turkey high death rates due to suicide were found to be in the young population [4, 5, 6, 74]. Of all the suicide cases in Turkey, 34.3% (1101 people) were in the 15 to 29 age group [74]. It is important to be knowledgeable about the preventive factors and risk

factors about suicide probability in order to prevent deadly results in adolescents. Suicide probability, which is defined as a general tendency to kill oneself, enables a new measurement for the conceptualization and assessment of the suicide risk. Suicide probability is defined with the scores obtained from the subscales of suicidal ideation, negative self-evaluation, hostility and hopelessness [17].

Gender is considered an important factor in suicidal ideas and behaviors in adolescents. Studies show higher rates of suicidal ideas and suicide attempts in girls [e.g. 34, 67, 80], and much higher completed suicide rates in boys [19, 67, 80]. Moreover, the relationship of suicidal ideas and behaviors with important protective and risk factors such as depression and self-respect is known to differ by gender [79]. Therefore, an investigation of both protective factors and risk factors by gender could help to understand suicide probability better. The present study aims to investigate the relationship of social support and coping behaviors, which are among protective factors and risk factors, with suicide probability in adolescents by gender.

Several studies have investigated the effects of social support on mental health [14, 16, 21, 49]. As reported by Brugha [10], social support is acknowledged to have beneficial effects on physical and psychological health. Cohen and Wills [14] proposed two models that explain the relationship between social support and health and well-being. One of them is the "stress-buffering model", which suggests that social support affects well-being positively by decreasing negative effects of the social support stressors [14]. According to this theory, individuals who have strong social support systems can better cope with stressful life events in comparison to individuals who have weak social support system [13, 66]. The other theory is the "main effect model". This model mentions a direct relationship between social support and health and proposes that social support has positive effects on physical health and well-being in all conditions [14].

Studies show that social support is a protective factor that decreases the probability of emergence of maladaptive behaviors in risky cases [8, 45]. Several studies reported

that social support perceptions of individuals who attempt suicide were lower [35, 65, 59], and lack of social support is one of the major risk factors for suicidal behaviors [11, 23, 27, 73]. Studies indicate that perceived social support particularly from family [27, 55, 59, 76] and friends [27, 76] was an important predictor of suicide risk. Özgüven et al. [59] reported that perceived social support from family was lower than the perceived social support from both friends and significant others in individuals who attempted suicide.

Another variable investigated in the study was coping styles. Coping is among risk factors for suicide attempt among adolescents [50]. Coping is defined as the cognitive and behavioral efforts to cope with internal and external demands in times of stressful situations [31]. Coping is the cognitive and behavioral efforts made to master, tolerate, or reduce the emotional stress caused by internal and external stress sources that exceed and consume one's sources [40]. Coping with stress affects adolescents' psychological, physical, and social well-being. Coping with stress affects adolescents' psychological, physical and social well-being [30].

Folkman and Lazarus [32] divide coping methods in two groups as problem-focused and emotion-focused. Problem-focused coping comprises a more active and planned logical analysis that leads to action. The purpose is to cope with the problems that cause trouble. As for emotion-focused coping, it is a passive method which involves the effort for eliminating emotions that developed due to an unwanted event. Both coping methods coexist in individuals' coping patterns, and the method used changes during interaction. While problem-focused behaviors involve active, logical, and conscious efforts for changing the situation; emotion-focused approaches generally involve being away, controlling self, seeking social support, and accepting. Seiffe-Krenke [64] found that there was an increase in the use of both emotion-focused and problem-focused coping strategies in adolescence years. Gibson et al. [36] found that adolescents from 17 countries used problem-focused coping strategies more frequently. Compas, Orosan, and Grant [15] state that use of emotion-focused coping strategies increases in adolescence.

A number of studies show that girls and boys use different ways to cope with stress [26, 37]. On the other hand, Frydenberg and Lewis [33] found no differences between boys and girls in terms of the use of strategies that focused on finding alternative solutions or changing the environment. However, girls seek more social support than boys, and they use more avoidance strategies. On the other hand, boys were found to act more actively for the solutions to the problems and take more risks.

A number of studies showed that individuals who had suicide probability and who attempted suicide used almost all effective coping methods less [12, 50], turned problems into disasters [51], and had difficulty in providing options

to the problems [43] in comparison to the ones in the control group. Suicide risk is negatively associated with redefining the problem by dividing it into little parts and finding alternatives, one of the coping styles [12]. Horesh et al. [43] found that individuals with suicide probability used less coping methods in terms of planning the problem and dividing it into parts, were inadequate in decreasing the effects of the problem or source of stress, and had lack of ability of obtaining new information.

Curry, Miller, Waugh, and Anderson [18] found that in their struggles with stressful situations, adolescents with suicide probability used emotion-focused methods rather than problem-focused ones, and that problem-focused coping was associated with low suicidality. It is emphasized that individuals with suicidality use avoidance strategies in case of problems. Orbach, Bar-Joseph, and Dror [58] reported that avoidance was a general coping style of those who attempted suicide and those who had suicidal ideas. Individuals who have high suicide probability give negative emotional reactions and use avoidance method as a problem solving strategy. Edwards and Holden [24] found that emotion-oriented coping and avoidance-distraction methods are associated with suicide probability.

The current study examined the relationship among perceived social support, coping styles and suicide probability in adolescents by gender. Fennig et al. [29] state that identification of the risk factors for both genders separately could help to explain the reasons for the differences between male and female suicidal behaviors. There are two studies on this issue conducted in Turkey [2, 7]. Both studies, which investigated suicide probability by gender in terms of various risk factors, were conducted with adults; they investigated suicide probability in terms of interpersonal communication styles, reasons for maintaining life, hopelessness, loneliness, and social support and gender roles variables. The present study was conducted with adolescents, and no studies in Turkey were found to focus on adolescents in this issue. Besides, much of the research to date has focused on the associations of social support and coping to actual suicide but not to probability. Hence, this study aims to find answers to the following questions:

- (1) Do adolescents' suicide possibility, perceived social support (from family, friends and significant others) and coping styles (self-confident style, optimistic style, helpless style, submissive style, seeking social support style) differ by gender?
- (2) How much do the perceived social support and coping styles in adolescents predict suicide probability?
- (3) Are there gender differences in the relationships among perceived social support, coping styles, and suicide probability in adolescents?

2. Method

2.1. Participants

This study was conducted in Adana, a city located in the Mediterranean region of Turkey. This region is among the places with high suicide rates [74]. The participants of the study included 227 girls (51%) and 218 boys (49%), a total of 445 students in Grades 9 to 12 from four public high schools in Adana central province, Turkey. Their ages ranged from 14 to 18 years ($M=15.90$, $SD=.87$). Average age of the female students was 15.82 ($SD=.85$) and that of males was 15.98 ($SD=.91$). Average age scores indicated no significant differences between males and females ($t=-1.90$, $p>.05$). Of all the students participating in the study, 140 were 9th graders (31.5%), 124 (27.9%) were 10th graders, 104 (23.4%) were 11th graders and 77 (17.3%) were 12th graders. The majority of participants reported that their parents were married (94.6 %). Furthermore, 5.2% of participants' parents were divorced, and 4.3 % of participants had a parent who was deceased. One class from all class levels were chosen randomly among the schools and the forms were administered to volunteer students.

2.2. Measures

2.2.1. The Suicide Probability Scale (SPS)

The SPS [17] is a self-report measure that assesses suicide risk in adolescents and adults. The 36-item scale consists of four subscales: hopelessness, suicidal ideation, negative self-evaluation, and hostility. All questions on the SPS are responded to using a 4-point Likert scale ranging from *none or a little of the time* (1) to *most or all of the time* (4). The SPS was adapted into Turkish by Tuğcu [75]. Cronbach's alpha coefficients were between .49 and .75 for the subscales and .87 for the total score.

2.2.2. Multidimensional Scale of Perceived Social Support (MSPSS)

The MSPSS was developed by Zimet, Dahlem, Zimet and Farley [84] and aims to measure perceived social support from three sources: family, friends, and a significant other. The 12-item scale consists of three subscales: perceived family support, perceived friends support and perceived significant other support. Each item is rated on a 7-point Likert-type response format, ranging from *very strongly disagree* (1) to *very strongly agree* (7). Higher scores indicate more perceived social support. The scale was adapted to Turkish by Eker and Arkar [25].

Cronbach's alpha coefficients were between .80 and .95 for the total scale and the sub-scales.

2.2.3. Ways of Coping with Stress Inventory (WCSI)

The WCSI is derived from the Ways of Coping Inventory [31] which is adopted into Turkish by Şahin and Durak [72]. Each item is rated on a 4-point Likert-type response format. The scale is consisted of 30 items and five subscales; Self-Confident, Optimistic, Helpless, Submissive, and Seeking of Social Support. The self-confident, optimistic and social support seeking approaches are considered as effective ways of coping with problems; helpless approach and submissive approach are considered as ineffective/emotion focused ways of coping. Cronbach's alpha reliability scores for CSS sub-scales are “.62-.80” for Self-confident Style, “.49-.68” for Optimistic Style, “.64-.73” for Helpless Style, “.47-.72” for Submissive Style, and “.45-.47” for Seeking Social Support Style [72].

2.3. Data Analysis

Means and standard deviation distributions were investigated. MANOVA, Pearson product moment correlations, and regression analyses were performed. Histogram and normality assumptions were examined and found to be satisfactory. The analysis was carried out using SPSS version 22.0.

3. Results

3.1. Gender Differences in Suicide Probability, Social Support and Coping Styles

To assess differences in suicide probability, social support and coping styles as a function of gender, MANOVA was conducted. Equality of variance was acceptable based on Box's M (Box's $M=51.72$; $F=1.13$, $p>.05$). MANOVA results of analysis revealed that there were significant differences according to gender in respect of suicide probability, social support and coping styles (Wilk's Lambda (Λ)= 0.893, $F_{(1,443)}=5.77$, $p<.001$). Table 1 shows the results from a factorial one-way ANOVA depending on gender and means and standard deviations of the variables. As shown in Table 1, the girls reported being more perceived social support from friends ($F=12.46$, $p<.001$) and significant others ($F=5.06$, $p<.05$) and having greater suicide probability than did the boys ($F=4.80$, $p<.05$).

Table 1. F results of MANOVA depending on gender

	Gender	N	X	SD	df	F	p
Suicide probability	M	218	69.05	16.06	1-443	4.80	.029*
	F	227	72.44	16.62			
Perceived social support from family	M	218	19.68	6.77	1-443	.61	.606
	F	227	19.16	7.31			
Perceived social support from friends	M	218	18.50	6.65	1-443	12.46	.000**
	F	227	20.68	6.42			
Perceived social support from significant others	M	218	17.60	7.02	1-443	5.06	.025*
	F	227	19.16	7.60			
Self-confident style	M	218	14.90	3.26	1-443	.324	.569
	F	227	15.07	3.10			
Optimistic style	M	218	10.11	2.52	1-443	.504	.478
	F	227	9.93	2.71			
Helpless style	M	218	11.87	4.32	1-443	24.19	.000**
	F	227	13.82	4.03			
Submissive style	M	218	6.50	3.23	1-443	.94	.332
	F	227	6.79	3.23			
Seeking of social support style	M	218	7.33	2.21	1-443	1.86	.277
	F	227	7.56	2.39			

Note: M= Male, F= Female, * p<.05, **p<.001

Table 2. Correlations of predictor and criterion variables for total sample

	1	2	3	4	5	6	7	8	9
1. Suicide probability	—								
2. Perceived social support from family	-.42***	—							
3. Perceived social support from friends	-.19***	.37***	—						
4. Perceived social support from significant others	-.18***	.40***	.51***	—					
5. Self-confident style	-.30***	.25***	.23***	.22***	—				
6. Optimistic style	-.35***	.30***	.15**	.14**	.58***	—			
7. Helpless style	.56***	-.28***	-.13**	.22**	-.29***	-.24***	—		
8. Submissive style	.36***	-.18***	-.11*	.22*	-.33***	-.15**	.53***	—	
9. Seeking of social support style	-.26***	.26***	.33***	.27***	.32***	.20***	-.26***	-.25***	—
M	70.78	19.41	19.61	18.40	14.99	10.02	12.86	6.65	7.45
SD	16.42	7.05	6.62	7.35	3.17	2.62	4.28	3.23	2.31

* p<.05, **p<.01, ***p<.001

3.2. Relationships of Suicide Probability, Social Support and Coping Styles

Pearson product-moment correlations were computed for the scores on the Suicide Probability Scale (M= 70.78, SD = 16.42), those on each of three social support scales: Family (M = 19.41, SD = 7.05), friends (M = 19.61, SD = 6.62), significant others (M = 18.40, SD = 7.35) and those on each of five coping styles: Self-confident (M = 14.99, SD = 3.17), optimistic (M = 10.02, SD = 2.62), helpless (M = 12.86, SD = 4.28), submissive (M = 6.65, SD = 3.23), seeking of social support (M = 7.45, SD = 2.31). The findings indicated that there were negative significant correlations between suicide probability and perceived social support from family (r =-.42, p<.001), perceived social support from friends (r = -.19, p<.001), perceived social support from significant others (r =-.18, p<.001), self-confident style (r = -.30, p<.001), optimistic style (r = -.35, p<.001), seeking of social support style (r = -.26, p<.001), and positive correlations between suicide probability and helpless style (r = .56, p<.001), submissive style (r = .36, p<.001).

The stepwise multiple linear regression analysis, which examined suicide probability according to the MSPSS and the WCSI for whole sample, is as shown in Table 3. The stepwise regression analysis results indicated that three variables contributed meaningfully to suicide probability.

Results revealed that, low level of perceived social support from family ((β=-.24, p<.001), helpless style (β=.45, p<.001), and optimistic style (β=-.17, p<.001) emerged as important predictors for suicide probability. Predictor variables account for 41% of the total variance $F_{(8, 444)} = 102.98, p<.001$.

To assess for gender differences in predicting suicide probability, the aforementioned multiple regression models were run separately for males and females. As shown in Table 3, the stepwise regression analysis results indicated that four variables contributed meaningfully to suicide probability for males. According to the standardized regression coefficient (β), variables that affect suicide probability are the perceived social support of family (β=- .22), the helpless style (β=.47), seeking of social support style (β= -.12) and optimistic style (β=-.12). Predictor variables together, explain 44% of the variance in suicide probability $F_{(8, 444)} = 43.04, p<.001$.

In the females the stepwise regression analysis results indicated that three variables contributed meaningfully to suicide probability. Results revealed that, perceived social support from family ((β= -.25, p<.001), helpless style (β=.38, p<.001), and optimistic style (β= -.20, p<.001) emerged as important predictors for suicide probability. Predictor variables account for 38% of the total variance $F_{(8, 444)} = 46.19, p<.001$.

Table 3. Regression model for effect of social support and coping styles on suicide probability

	R ²	R _{adj} ²	R ² _{change}	Beta	t	F
Whole sample						
Perceived social support from family	.18	.17	.18	-.24	-6.23**	93.79**
Helpless style	.39	.38	.21	.45	11.72**	139.66**
Optimistic style	.41	.41	.03	-.17	-4.31**	102.98**
Male						
Perceived social support from family	.17	.16	.17	-.22	-4.03**	43.07**
Helpless style	.42	.41	.25	.47	8.65**	77.25**
Seeking of social support style	.44	.43	.02	-.12	-2.14*	54.94**
Optimistic style	.45	.44	.01	-.12	-2.14*	43.04**
Female						
Perceived social support from family	.18	.18	.18	-.25	-4.32**	49.81**
Helpless style	.35	.34	.17	.38	6.68**	59.83**
Optimistic style	.38	.38	.04	-.20	-3.56**	46.19**

*p<.05, **p<.001

4. Discussion

The present study mainly investigated whether suicide probability, perceived social support and coping styles differ by gender. Girls' suicide probability, perceived social support from friends and significant others, and helpless style scores were found to be significantly higher in comparison to boys. Gender was found to be an important predictor of suicidal behaviors [83]. Related literature indicates that nonfatal suicide attempts are much common in women than men both in Turkey and in the world [e.g. 74, 83]. Besides, several studies report that women have more suicidal ideas than men [e.g. 41, 78]. The finding of this study indicating female adolescents' higher suicide probability is in line with the related literature.

Similar to the results of this study, a number of studies indicated that high school students' perceived social support from family did not differ by gender [e.g. 22, 47, 71], and girls' perceived support from friends was found to differ in favor of girls [e.g. 46, 56, 63, 71]. While generally adolescents spent more time with their friends, girls established deeper and more consistent relationships in small groups, and boys tended to be in different and large friends groups in line with their interests [82]. The difference in favor of girls might result from the fact that girls are more attached to their friends and share more things with each other in comparison to boys. Girls' perceived social support from significant others were found to be higher in comparison to boys. Boys' weaker perceived social support from friends and significant others could result from the fact that boys generally tend to solve their problems by themselves.

Only the use of helpless style among coping styles demonstrated difference by gender. Parallel to several studies in literature [e.g. 1; 60, 81], the present study also found that girls used helpless style more than boys. Girls' using this style in stressful situations more than boys could be associated with traditional gender roles.

As expected, a negative relationship was found between perceived social support from different areas and suicide probability. Besides, suicide probability is positively associated with ineffective coping styles (helpless and submissive) and negatively associated with effective coping styles (self-confident, optimist and seeking social support). The main purpose of this study is to identify the role of perceived social support and coping styles in predicting suicide probability in female and male adolescents. A number of analyses were performed in line with this general purpose. Results of the regression analysis which was conducted for all participants showed that lack of use of perceived support from family and optimistic style and higher use of helpless style are significant indicators of suicide probability. Regression analysis performed for boys and girls separately showed that lack of use of perceived support from family and

optimistic style and higher use of helpless style are seen as the common predictors of suicide probability in both girls and boys. Differently, lack of use of seeking social support style among boys was found to be a predictor of suicide probability.

Studies show that social support promotes physical and psychological health [53, 57, 70, 77], and adolescents with high social support levels demonstrated less anxiety and depression symptoms and behavioral problems [8]. Terzi Ünsal and Kapçı [73] report that lack of social support is an important risk factor in adolescents; it is also a secondary risk factor in adolescent suicides. A number of studies found a negative relationship between social support and suicidal ideas and behaviors [e.g. 44, 68, 53]. Family is the fundamental and primary source of support, and is associated with low suicidal ideas [48]. Although friends and significant others are an important source of support for adolescents [28], several studies indicate that family support is a more important source than friend support in traumatic situations [e.g. 3, 52, 62]. Lai and Ma [52] stated that while perceived support from family was a predictor of suicidal ideas, perceived support from friends and significant others were not. Adolescents' family relationships, warmth and support they receive from their parents are some of the fundamental factors on their well-being; insufficient family support could increase their feelings of rejection, hopelessness, and loneliness. Hence, Helsen Vollebergh, and Meeus [42] reported that parent support was the strongest predictor of the problems experienced in adolescence. Besides, Soylu et al. [68] remarked that perception of low family support and suicide attempt are closely associated, and suicide attempt was higher in individuals with low family and social support. In a similar vein, Rojas et al. [62] reported that both suicidal ideas and suicide attempts are associated with perceived lack of support from parents. In line with these studies, perception of high family support, by enabling a sheltered environment in troubled times, could decrease suicide probability in both female and male adolescents.

"Helpless" and "Optimistic" styles were the most important predictors of suicide probability in both female and male adolescents. Individuals who use helpless style for coping, which is an ineffective approach in coping with stress, withdraw in cases of stress, avoid facing with the problem, and wait for the stressful situation to pass. Related literature includes a number of studies which indicate a negative relationship between psychological well-being and use of helpless style, which is an emotion-focused style [e.g. 9, 39]. Studies which investigate the relationships between suicide behaviors and coping styles [e.g. 18, 24, 58] showed that individuals with suicide probability used more emotion-focused coping strategies (e.g. avoidance), namely maladaptive strategies, which is in line with the results of this study.

High levels of use of "optimistic style", which is considered an effective method in coping with stress,

decrease suicide probability in both female and male adolescents. Individuals who use optimistic style are people who can control themselves in times of stressful situations, assess events in a logical way, and have positive attitudes [72]. Güç [38] found that using optimistic style predicted attitudes of seeking psychological help. Studies show that individuals with suicide probability used almost all effective coping methods less [12, 50], and had difficulty in providing options to the problems [43].

Different from female adolescents, seeking social support style was found to be a significant predictor of suicide probability in male adolescents. Suicide probability was found to increase in males who use seeking social support less. Studies show that male adolescents sought less social support [33], and had more negative help-seeking behaviors [54]. This finding could be associated with social roles attributed to males such as being strong and independent.

Like all studies, the present study has a number of limitations. First of all, the scales used in this study are self-report scales. Next, the sample is composed of schools in a city center in Turkey, which does not identify all adolescents. Random selection from various regions is needed so that the results can be generalized.

This study investigated suicide probability in adolescents by gender. Based on the findings of the study, it is recommended that programs for suicide prevention should include psycho-educational programs on developing effective coping styles. Preparing and implementing psycho-educational programs that increase coping skills contribute to decrease suicide probability. Programs for male adolescents could include activities that promote use of seeking social support style. Besides, education programs that inform parents about the social support to be provided to adolescents are of importance in terms of adolescents' psychological health.

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